

CLAIMS

What is claimed is:

- 1 ~~1.~~ A method of protecting tin solderable surfaces comprising:
2 providing a solderable surface having tin oxide thereon;
3 applying complexing agent to said solderable surface; and
4 forming reaction product with said tin oxide and said complexing agent,
5 wherein said reaction product decomposes to tin oxide and volatile products upon being
6 exposed to reflow conditions.
- 1 2. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent forms a reaction product with tin.
- 1 3. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent and tin react to form a tin carboxylate.
- 1 4. A method of protecting tin solderable surfaces, according to claim 1, wherein
2 forming said reaction product with said tin oxide and said complexing agent comprises
3 heating.
- 1 5. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 reaction product decomposes to volatile products where subject to reflow temperatures.
- 1 6. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent comprises pimelic acid.

1 7. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent further comprises flux.

1 8. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent comprises sebacic acid.

1 9. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent is selected from the group consisting of dicarboxylic acids, dibasic acids,
3 and complexing agents.

1 10. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 reaction product comprises tin pimelate.

1 11. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 reaction product comprises tin dicarboxylate.

1 ~~12. A method of joining tin-solderable surfaces comprising:~~
2 ~~providing a first tin solderable surface and a second tin solderable surface,~~
3 ~~each said surface having tin oxide thereon;~~
4 ~~applying complexing agent to said at least one tin solderable surface;~~
5 ~~forming reaction product with said tin oxide and said complexing agent,~~
6 ~~wherein said reaction product decomposes to tin oxide and volatile products upon being~~
7 ~~exposed to reflow conditions;~~
8 ~~intimately contacting a first tin solderable surface with a second tin~~
9 ~~solderable surface; and~~
10 ~~reflowing said first and said second surfaces.~~

1 22. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 complexing agent and tin react to form tin carboxylate.

1 12 23. A method of protecting tin solderable surfaces, according to claim 1, wherein
2 applying complexing agent comprises vapor phase deposition of complexing agent.

1 13 24. A method of protecting tin solderable surfaces, according to claim 1, wherein
2 complexing agent comprises adipic acid.

1 14 25. A method of protecting tin solderable surfaces, according to claim 11, wherein
2 forming said reaction product with said tin oxide and said complexing agent comprises
3 heating.

1 26. A method of joining tin-solderable surfaces, according to claim 12, wherein
2 applying complexing agent comprises vapor phase deposition of complexing agent.

1 27. A method of protecting tin solderable surfaces, according to claim 12, wherein said
2 complexing agent comprises sebacic acid.

1 28. A method of protecting tin solderable surfaces, according to claim 12, wherein
2 complexing agent comprises adipic acid.

1 29. The structure containing reaction product according to claim 1.

1 30. The structure containing at least one solder joint formed according to claim 1.

1 31. The structure containing reaction product according to claim 12.

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1 13. A method of joining tin-solderable surfaces, according to claim 12, wherein said first
2 tin solderable surface is a chip solder bump surface; and wherein said second tin solderable
3 surface; is a laminate solder pad.

1 14. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 complexing agent forms a reaction product with tin.

1 15. A method of joining tin-solderable surfaces, according to claim 12, wherein forming
2 said reaction product with said tin oxide and said complexing agent comprises heating.

1 16. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 complexing agent comprises pimelic acid.

1 17. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 complexing agent further comprises flux.

1 18. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 complexing agent is a dicarboxylic acid.

1 19. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 reaction product comprises tin pimelate.

1 20. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 reaction product comprises tin dicarboxylate.

1 21. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 reaction product decomposes to volatile products where subject to reflow temperatures.

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32. The structure containing at least one solder joint formed according to claim 12.

add. 32

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